

*WHAT IS CLAIMED IS:*

1 1. A delay equalizer connected between input and output terminals,  
2 comprising:

3 a resonance circuit including an inductor and a capacitor and  
4 having a resonance frequency for determining a center frequency for  
5 delay equalization; and  
6 a variable resistor made variable in resistance,  
7 with a Q value of said resonance circuit being varied by a change  
8 of a resistance of said variable resistor to vary a quantity of the delay  
9 equalization.

1 2. A delay equalizer connected between input and output terminals,  
2 comprising:

3 a resonance circuit including an inductor and a variable  
4 capacitance capacitor made variable in capacitance and having a  
5 resonance frequency for determining a center frequency for delay  
6 equalization; and

7 a variable resistor made variable in resistance,  
8 with said center frequency for the delay equalization being made  
9 variable with a variation of the capacitance of said variable capacitance  
10 capacitor, and a Q value of said resonance circuit being varied with a  
11 variation of resistance of said variable resistor to vary a quantity of the  
12 delay equalization.

1 3. A delay equalizer according to claim 1, wherein a PIN diode is  
2 used as said variable resistor, and a power circuit is additionally

3 provided to control a current flowing through said PIN diode, with the  
4 current flowing through said PIN diode being controlled to change an  
5 internal resistance of said PIN diode for controlling the quantity of  
6 the delay equalization.

1 4. A delay equalizer according to claim 2, wherein a voltage  
2 variable capacitor whose capacitance is made variable through voltage  
3 control is used as said variable capacitor, and a power circuit is  
4 additionally provided to control a voltage across said voltage  
5 variable-capacitance capacitor, with the voltage across said voltage  
6 variable capacitor being controlled to vary the resonance frequency of  
7 said resonance circuit for controlling the center frequency for the delay  
8 equalization.

1 5. A delay equalizer according to claim 2, wherein an PIN diode  
2 is used as said variable resistor, and a first power circuit is  
3 additionally provided to control a current flowing through said PIN  
4 diode, a voltage variable capacitor whose capacitance is made  
5 variable under voltage control is used as said variable capacitor, and  
6 a second power circuit is further provided to control a voltage across  
7 said voltage variable capacitor, with the current flowing said PIN  
8 diode being controlled by said first power circuit to vary an internal  
9 resistance of said PIN diode for controlling the quantity of the delay  
10 equalization, and the voltage across said voltage variable capacitor  
11 being controlled by said second power circuit to vary the resonance

- 12 frequency of said resonance circuit for controlling the center  
13 frequency for the delay equalization.

1 6. A delay equalizer comprising a plurality of delay equalizing  
2 sections each including an inductor, a capacitor and a variable  
3 resistor, cascade-connected between input and output terminals, with  
4 a resistance of said variable resistor of each of said delay equalizing  
5 sections being individually controlled to vary a quantity of delay  
6 equalization according to center frequency of each delay equalizing  
7 section.

1 7. A delay equalizer comprising a plurality of delay equalizing  
2 sections each including an inductor, a variable capacitor and a  
3 variable resistor, cascade-connected between input and output  
4 terminals, with a capacitance of said variable capacitor of each of  
5 said delay equalizing sections being individually controlled to vary a  
6 resonance frequency of a resonance circuit comprising said inductor  
7 and said variable capacitor for controlling a center frequency for  
8 delay equalization in each of said delay equalizing sections, and a  
9 resistance of said variable resistor of each of said delay equalizing  
10 sections being individually controlled to vary a quantity of the delay  
11 equalization according to center frequency of each delay equalizing  
12 section.

1 8. A delay equalizer according to claim 6, wherein, in each of said  
2 delay equalizing sections, a PIN diode is used as said variable

3 resistor, and a power circuit is additionally provided to control a  
4 current flowing through said PIN diode, with the current flowing  
5 through said PIN diode of each of said delay equalizing sections  
6 being controlled to change an internal resistance of said PIN diode  
7 for controlling a quantity of delay equalization.

1 9. A delay equalizer according to claim 7, wherein, in each of said  
2 delay equalizing sections, a voltage variable capacitor whose  
3 capacitance is made variable in accordance through voltage control  
4 is used as said variable capacitor, and a power circuit is additionally  
5 provided for controlling a voltage across said voltage variable  
6 capacitor, with the voltage across said voltage variable capacitor of  
7 each of said delay equalizing sections being controlled to vary the  
8 resonance frequency of said resonance circuit so that the center  
9 frequency is varied according to delay equalizing section.

1 10. A delay equalizer according to claim 7, wherein, in each of said  
2 delay equalizing sections, a PIN diode is used as said variable  
3 resistor, and a first power circuit is additionally provided for  
4 controlling a current passing through said PIN diode, while a voltage  
5 variable capacitor whose capacitance is made variable through  
6 voltage control is used as said variable capacitor, and a second  
7 power circuit is further provided for controlling a voltage across said  
8 voltage variable capacitor, with the current flowing through said PIN  
9 diode of each of said delay equalizing sections being controlled by  
10 said first power circuit to vary an internal resistance of said PIN

11 diode for controlling the quantity of the delay equalization according  
12 to delay equalizing section, and the voltage across said voltage  
13 variable capacitor of each of said delay equalizing sections being  
14 controlled by said second power circuit to vary the resonance  
15 frequency of said resonance circuit for controlling the center  
16 frequency according to delay equalizing section.

1 11. An optical transmitter comprising:  
2 frequency modulating means for frequency-modulating  
3 frequency-multiplexed multi-channel signals;  
4 optical modulating means for intensity-modulating signal light  
5 on the basis of the modulated signals obtained by said frequency  
6 modulating means for optical transmission; and  
7 a delay equalizer provided before said optical modulating  
8 means and including an inductor and a capacitor, which constitute a  
9 resonance circuit with a resonance frequency for determining a  
10 center frequency for delay equalization, and a variable resistor made  
11 variable in resistance, with a Q value of said resonance circuit being  
12 varied by varying a resistance of said variable resistor for controlling  
13 a quantity of delay equalization so that a delay deviation on a  
14 frequency-modulated signal transmission line being equalized by  
15 said delay equalizer to reduce a delay distortion stemming from the  
16 delay deviation.

1 12. An optical transmitter comprising:

2 frequency modulating means for frequency-modulating  
3 frequency-multiplexed multi-channel signals;  
4 optical modulating means for intensity-modulating signal light  
5 on the basis of the modulated signals obtained by said frequency  
6 modulating means for optical transmission; and  
7 a delay equalizer provided before said optical modulating  
8 means and including an inductor and a variable capacitor made  
9 variable in capacitance, which constitute a resonance circuit with a  
10 given resonance frequency which determines a center frequency for  
11 delay equalization, and a variable resistor made variable in  
12 resistance, with the center frequency for the delay equalization being  
13 varied by varying a capacitance of said variable capacitor and a Q  
14 value of said resonance circuit being varied by varying a resistance  
15 of said variable resistor for controlling a quantity of the delay  
16 equalization so that a delay deviation on a frequency-modulated  
17 signal transmission line is equalized by said delay equalizer to  
18 reduce a delay distortion stemming from the delay deviation.

1 13. An optical transmitter comprising:

2 frequency modulating means for frequency-modulating  
3 frequency-multiplexed multi-channel signals; optical modulating  
4 means for intensity-modulating signal light on the basis of the  
5 modulated signals obtained by said frequency modulating means for  
6 optical transmission; and

7 a delay equalizer provided before said optical modulating  
8 means and including an inductor and a capacitor, which constitute a  
9 resonance circuit with a resonance frequency determining a center  
10 frequency for delay equalization, a PIN diode made variable in  
11 resistance, and a power circuit for controlling a current flowing  
12 through said PIN diode, with a current flowing through said PIN diode  
13 being controlled to vary an internal resistance of said PIN diode for  
14 controlling a quantity of the delay equalization so that a delay  
15 deviation on a frequency-modulated signal transmission line is  
16 equalized by said delay equalizer to reduce a delay distortion  
17 stemming from the delay deviation.

1 14. An optical transmitter comprising:  
2 frequency modulating means for frequency-modulating  
3 frequency-multiplexed multi-channel signals;  
4 optical modulating means for intensity-modulating signal light  
5 with the modulated signals obtained by said frequency modulating  
6 means for optical transmission; and  
7 a delay equalizer provided before said optical modulating  
8 means and including an inductor and a voltage variable capacitor  
9 made variable in capacitance through voltage control, which  
10 constitute a resonance circuit with a resonance frequency  
11 determining a center frequency for delay equalization, a variable  
12 resistor made variable in resistance, and a power circuit for  
13 controlling a voltage across said voltage variable capacitor, with a Q

14 value of said resonance circuit being varied by varying a resistance  
15 of said variable resistor for controlling a quantity of the delay  
16 equalization, and the voltage across said voltage variable capacitor  
17 being controlled to vary said resonance frequency of said resonance  
18 circuit for controlling the center frequency for the delay equalization  
19 so that a delay deviation on a frequency-modulated signal  
20 transmission line is equalized by said delay equalizer to reduce a  
21 delay distortion stemming from the delay deviation.

1 15. An optical transmitter comprising:  
2 frequency modulating means for frequency-modulating  
3 frequency-multiplexed multi-channel signals;  
4 optical modulating means for intensity-modulating signal light  
5 on the basis of the modulated signals obtained by said frequency  
6 modulating means for optical transmission; and  
7 a delay equalizer provided before said optical modulating  
8 means and including an inductor and a voltage variable capacitor  
9 made variable in capacitance through voltage control, which  
10 constitute a resonance circuit with a resonance frequency  
11 determining a center frequency for delay equalization, a PIN diode  
12 made variable in resistance, a first power circuit for controlling a  
13 current flowing through said PIN diode, and a second power circuit  
14 for controlling a voltage across said voltage variable capacitor, with  
15 the current flowing through said PIN diode being controlled by said  
16 first power circuit to vary an internal resistance of said PIN diode for



17 controlling a quantity of the delay equalization, and the voltage  
 18 across said voltage variable capacitor being controlled by said  
 19 second power circuit to vary the resonance frequency of said  
 20 resonance circuit for controlling the central frequency for the delay  
 21 equalization so that a delay deviation on a frequency-modulated  
 22 signal transmission line is equalized by said delay equalizer to  
 23 reduce a delay distortion stemming from the delay deviation.

1 16. An optical transmitter comprising:  
 2 frequency modulating means for frequency-modulating  
 3 frequency-multiplexed multi-channel signals;  
 4 optical modulating means for intensity-modulating signal light  
 5 on the basis of the modulated signals obtained by said frequency  
 6 modulating means for optical transmission; and  
 7 a delay equalizer provided before said optical modulating  
 8 means and including a plurality of delay equalizing sections, each  
 9 including an inductor, a capacitor and a variable resistor,  
 10 cascade-connected between input and output terminals, with a  
 11 quantity of delay equalization being varied according to center  
 12 frequency of each delay equalizing section by individually controlling  
 13 a resistance of said variable resistor of each of the delay equalizing  
 14 sections so that a delay deviation on a frequency-modulated signal  
 15 transmission line is equalized by said delay equalizer to reduce a  
 16 delay distortion stemming from the delay deviation.

1 17. An optical transmitter comprising:

frequency modulating means for frequency-modulating  
frequency-multiplexed multi-channel signals;  
optical modulating means for intensity-modulating signal light  
on the basis of the modulated signals obtained by said frequency  
modulating means for optical transmission; and

a delay equalizer provided before said optical modulating  
means and including a plurality of delay equalizing sections, each  
including an inductor, a variable capacitor and a variable resistor,  
cascade-connected between input and output terminals, with a  
resonance frequency of a resonance circuit being varied by  
individually controlling a capacitance of said variable capacitor of  
each of said delay equalizing sections for controlling a center  
frequency for delay equalization, and a quantity of delay equalization  
being varied according to center frequency by individually controlling  
a resistance of said variable resistor of each of said delay equalizing  
sections so that a delay deviation on a frequency-modulated signal  
transmission line is equalized by said delay equalizer to reduce a  
delay distortion stemming from the delay deviation.

18. An optical transmitter according to claim 16, wherein, in each  
of the delay equalizing sections, a PIN diode is used as said variable  
resistor, and a power circuit is additionally provided for controlling a  
current flowing through said PIN diode, with the current flowing  
through said PIN diode of each of said delay equalizing sections

6 being controlled to vary an internal resistance of said PIN diode for  
7 controlling a quantity of the delay equalization.

1 19. An optical transmitter according to claim 17, wherein, in each  
2 of the delay equalizing sections, a voltage variable capacitor made  
3 variable in capacitance through voltage control is used as said  
4 variable capacitor, and a power circuit is additionally for controlling a  
5 voltage across said voltage variable capacitor, with the voltage value  
6 across said voltage variable capacitor of each of said delay  
7 equalizing sections being controlled to vary the resonance frequency  
8 of said resonance circuit for controlling a center frequency for each  
9 of said delay equalizing sections.

1 20. An optical transmitter according to claim 17, wherein, in each  
2 of the delay equalizing sections, a PIN diode is used as the variable  
3 resistor, and a first power circuit is additionally provided for  
4 controlling a current flowing through said PIN diode, while a voltage  
5 variable capacitor made variable in capacitance through voltage  
6 control is used as said variable capacitor, and a second power circuit  
7 is further provided for controlling a voltage across said voltage  
8 variable capacitor, with the current flowing through said PIN diode of  
9 each of said delay equalizing sections being controlled by said first  
10 power circuit to vary an internal resistance of said PIN diode for  
11 controlling a quantity of the delay equalization according to delay  
12 equalizing section, and the voltage across said voltage variable  
13 capacitor each of said delay equalizing sections being controlled by

14 said second power circuit to vary the resonance frequency of said  
15 resonance circuit for controlling the center frequency according to  
16 delay equalizing section.

1 21. An optical transmission system comprising:  
2 an optical transmitter including:  
3 frequency modulating means for frequency-modulating  
4 frequency-multiplexed multi-channel signals;  
5 optical modulating means for intensity-modulating signal  
6 light on the basis of the modulated signals obtained by said  
7 frequency modulating means for optical transmission; and  
8 a delay equalizer provided before the optical modulating  
9 means and is composed of a resonance circuit comprising an  
10 inductor and a capacitor and having a resonance frequency for  
11 determining a center frequency for delay equalization, and a variable  
12 resistor made variable in resistance, with a Q value of said  
13 resonance circuit being varied in accordance with a variation of a  
14 resistance of said variable resistor for controlling a quantity of the  
15 delay equalization; and  
16 an optical receiver for optical/electrical-converting and  
17 frequency-demodulating an optical signal transmitted from said  
18 optical transmitter to transmit frequency-multiplexed multi-channel  
19 signals,  
20 said delay equalizer equalizing a delay deviation on a  
21 frequency-modulated signal transmission line in said optical

22 transmitter and further equalizing a delay deviation on a  
23 frequency-modulated signal transmission line in said optical receiver  
24 to reduce a delay distortion stemming from the delay deviations from  
25 said optical transmitter to said optical receiver.

1 22. An optical transmission system comprising:  
2 an optical transmitter including;  
3 frequency modulating means for frequency-modulating  
4 frequency-multiplexed multi-channel signals;  
5 optical modulating means for intensity-modulating signal  
6 light on the basis of the modulated signals obtained by said  
7 frequency modulating means for optical transmission; and  
8 a delay equalizer provided before said optical modulating  
9 means and composed of a resonance circuit comprising an inductor  
10 and a variable capacitor made variable in capacitance and having a  
11 resonance frequency determining a center frequency for delay  
12 equalization, and a variable resistor made variable in resistance, with  
13 the center frequency for the delay equalization being varied in  
14 accordance with a variation of a capacitance of said variable  
15 capacitor, and a Q value of said resonance circuit being varied in  
16 accordance with a variation of a resistance of said variable resistor  
17 for controlling a quantity of the delay equalization; and  
18 an optical receiver for optical/electrical-converting and  
19 frequency-demodulating an optical signal transmitted from said

20 optical transmitter to transmit frequency-multiplexed multi-channel  
21 signals,  
22 said delay equalizer equalizing a delay deviation on a  
23 frequency-modulated signal transmission line in said optical  
24 transmitter and further equalizing a delay deviation on a  
25 frequency-modulated signal transmission line in said optical receiver  
26 to reduce a delay distortion stemming from the delay deviations from  
27 said optical transmitter to said optical receiver.

1 23. An optical transmission system comprising:  
2 an optical transmitter including;  
3 frequency modulating means for frequency-modulating  
4 frequency-multiplexed multi-channel signals;  
5 optical modulating means for intensity-modulating signal  
6 light on the basis of the modulated signals obtained by said  
7 frequency modulating means for optical transmission; and  
8 a delay equalizer provided before said optical modulating  
9 means and composed of a resonance circuit comprising an inductor  
10 and a capacitor and having a resonance frequency for determining a  
11 center frequency for delay equalization, a PIN diode made variable in  
12 resistance, and a power circuit for controlling a current passing  
13 through said PIN diode, with a current flowing through said PIN diode  
14 being controlled to vary an internal resistance of said PIN diode for  
15 controlling a quantity of delay equalization; and

16 an optical receiver for optical/electrical-converting and  
17 frequency-demodulating an optical signal transmitted from said  
18 optical transmitter to transmit frequency-multiplexed multi-channel  
19 signals,  
20 said delay equalizer equalizing a delay deviation on a  
21 frequency-modulated signal transmission line in said optical  
22 transmitter and further equalizing a delay deviation on a  
23 frequency-modulated signal transmission line in said optical receiver  
24 to reduce a delay distortion stemming from the delay deviations from  
25 said optical transmitter to said optical receiver.

1 24. An optical transmission system comprising:  
2 an optical transmitter including;  
3 frequency modulating means for frequency-modulating  
4 frequency-multiplexed multi-channel signals;  
5 optical modulating means for intensity-modulating signal  
6 light on the basis of the modulated signals obtained by said  
7 frequency modulating means for optical transmission; and  
8 a delay equalizer provided before said optical modulating  
9 means and composed of a resonance circuit comprising an inductor  
10 and a voltage variable capacitor made variable in capacitance  
11 through voltage control and having a resonance frequency for  
12 determining a center frequency for delay equalization, a variable  
13 resistor made variable in resistance, and a power circuit for  
14 controlling a voltage across said voltage variable capacitor, with a Q

15 value of said resonance circuit being varied in accordance with a  
 16 variation of the resistance of said variable resistor for controlling a  
 17 quantity of the delay equalization, and the voltage across said  
 18 voltage variable capacitor being controlled to vary the resonance  
 19 frequency of said resonance circuit for controlling the center  
 20 frequency for the delay equalization; and

21 an optical receiver for optical/electrical-converting and  
 22 frequency-demodulating an optical signal transmitted from said  
 23 optical transmitter to transmit frequency-multiplexed multi-channel  
 24 signals,

25 said delay equalizer equalizing a delay deviation on a  
 26 frequency-modulated signal transmission line in said optical  
 27 transmitter and further equalizing a delay deviation on a  
 28 frequency-modulated signal transmission line in said optical receiver  
 29 to reduce a delay distortion stemming from the delay deviations from  
 30 said optical transmitter to said optical receiver.

1 25. An optical transmission system comprising:

2 an optical transmitter including;

3 frequency modulating means for frequency-modulating  
 4 frequency-multiplexed multi-channel signals;

5 optical modulating means for intensity-modulating signal  
 6 light on the basis of the modulated signals obtained by said  
 7 frequency modulating means for optical transmission; and



a delay equalizer provided before said optical modulating means and composed of a resonance circuit comprising an inductor and a voltage variable capacitor made variable in capacitance through voltage control and having a resonance frequency for determining a center frequency for delay equalization, a PIN diode made variable in resistance, a first power circuit for controlling a current flowing through said PIN diode, and a second power circuit for controlling a voltage across said voltage variable capacitor, with the current flowing through said PIN diode being controlled by said first power circuit to vary an internal resistance of said PIN diode for controlling a quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled by said second power circuit to vary the resonance frequency of said resonance circuit for controlling the center frequency for the delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

- 1     26.    An optical transmission system comprising:  
2            an optical transmitter including;  
3                frequency modulating means for frequency-modulating  
4     frequency-multiplexed multi-channel signals;  
5                optical modulating means for intensity-modulating signal  
6     light on the basis of the modulated signals obtained by said  
7     frequency modulating means for optical transmission; and  
8                a delay equalizer provided before said optical modulating  
9     means and composed of a plurality of delay equalizing sections,  
10    each including an inductor, a capacitor and a variable resistor,  
11    cascade-connected between input and output terminals, with a  
12    resistance of said variable resistor of each of said delay equalizing  
13    sections being controlled individually for controlling a quantity of  
14    delay equalization according to center frequency of each of said  
15    delay equalizing sections; and  
16            an optical receiver for optical/electrical-converting and  
17    frequency-demodulating an optical signal transmitted from said  
18    optical transmitter to transmit frequency-multiplexed multi-channel  
19    signals,  
20            said delay equalizer equalizing a delay deviation on a  
21    frequency-modulated signal transmission line in said optical  
22    transmitter and further equalizing a delay deviation on a  
23    frequency-modulated signal transmission line in said optical receiver

24 to reduce a delay distortion stemming from the delay deviations from  
25 said optical transmitter to said optical receiver.

1 27. An optical transmission system comprising:  
2 an optical transmitter including;  
3 frequency modulating means for frequency-modulating  
4 frequency-multiplexed multi-channel signals;  
5 optical modulating means for intensity-modulating signal  
6 light on the basis of the modulated signals obtained by said  
7 frequency modulating means for optical transmission; and  
8 a delay equalizer provided before said optical modulating  
9 means and composed of a plurality of delay equalizing sections,  
10 each including an inductor, a variable capacitor and a variable  
11 resistor, cascade-connected between input and output terminals, with  
12 a capacitance of said variable capacitor of each of said delay  
13 equalizing sections being control individually to vary a resonance  
14 frequency of a resonance circuit comprising said inductor and said  
15 variable capacitor for controlling a center frequency for delay  
16 equalization, and a resistance of said variable resistor of each of  
17 said delay equalizing sections being controlled individually for  
18 controlling a quantity of the delay equalization according to center  
19 frequency of each of said delay equalizing sections; and  
20 an optical receiver for optical/electrical-converting and  
21 frequency-demodulating an optical signal transmitted from said

22 optical transmitter to transmit frequency-multiplexed multi-channel  
23 signals,  
24 said delay equalizer equalizing a delay deviation on a  
25 frequency-modulated signal transmission line in said optical  
26 transmitter and further equalizing a delay deviation on a  
27 frequency-modulated signal transmission line in said optical receiver  
28 to reduce a delay distortion stemming from the delay deviations from  
29 said optical transmitter to said optical receiver.

1 28. An optical transmission system according to claim 26, wherein,  
2 in each of said delay equalizing sections, a PIN diode is used as said  
3 variable resistor, and a power circuit is additionally provided for  
4 controlling a current value flowing through said PIN diode, with the  
5 current flowing through said PIN diode of each of said delay  
6 equalizing sections being controlled to vary an internal resistance of  
7 said PIN diode for controlling the quantity of the delay equalization.

1 29. An optical transmission system according to claim 27, wherein,  
2 in each of said delay equalizing sections, a voltage variable  
3 capacitor made variable in capacitance through voltage control is  
4 used as said variable capacitor, and a power circuit is additionally  
5 provided for controlling a voltage across said voltage variable  
6 capacitor, with the voltage value across said voltage variable  
7 capacitor of each of said delay equalizing sections being controlled  
8 to vary the resonance frequency of said resonance circuit for  
9 controlling the center frequency at every delay equalizing section.

1 30. An optical transmission system according to claim 27, wherein,  
2 in each of said delay equalizing sections, a PIN diode is used as said  
3 variable resistor, and a first power circuit is additionally provided for  
4 controlling a current flowing through said PIN diode, while a voltage  
5 variable capacitor made variable in capacitance through voltage  
6 control is used as said variable capacitor, and a second power circuit  
7 is further provided for controlling a voltage across said voltage  
8 variable capacitor, with the current flowing said PIN diode of each of  
9 said delay equalizing sections being controlled by said first power  
10 circuit to vary an internal resistance of said PIN diode for controlling  
11 the quantity of the delay equalization at every delay equalizing  
12 section, and a voltage across said voltage variable capacitor of each  
13 of said delay equalizing sections being controlled by said second  
14 power circuit to vary the resonance frequency of said resonance  
15 circuit for controlling the center frequency at every delay equalizing  
16 section.